

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-007625**Date Inspected:** 20-Jun-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 1900**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 700**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** See Below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG and Tower Fabrication**Summary of Items Observed:**

CWI Inspectors: Mr. Wu Ming Kai, Mr. Xu Xian Ping,

On this date CALTRANS OSM Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. The QA Inspector observed the following:

Prior to Caltrans QA Inspectors' concurring with issuance of OBG deck plate closed rib green tag releases a review of the ultrasonic inspection database is performed to verify all closed rib tack weld repair locations have been ultrasonically accepted. Today this QA Inspector, Mr. Paul Dawson, performed data entry of ultrasonic inspection information from the field generated Ultrasonic inspection data sheets onto the common drive computer database for the following OBG deck panels: DP127-002, DP181-001, DP237-001, DP318-001 and DP397-001.

OBG Bay 3

This QA Inspector observed ZPMC welder Ms. Jiang Jingteng, stencil 046830 had just used submerged arc welding procedure specification WPS-B-T-2221-B-L2C-S-2 to complete groove weld SP3014-001-097. This QA Inspector observed Quality Control personnel had recorded a welding current of 568 amps, and 30.5 volts. Items observed on this date appeared to generally comply with applicable contract documents.

OBG Bay 14

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This QA Inspector observed ZPMC welder Ms. He Jun Rong, stencil 201215 is using flux cored welding procedure WPS-B-T-2233-B-U4b-F to make OBG weld SEG031-046. This QA Inspector observed that the welding is taking place on an elevated scaffold and that ZPMC QC Inspector Mr. Liu Wan Ning has recorded a welding current of 210 amps and 25.2 volts. Items observed on this date appear to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder stencil 048212 is using shielded metal arc welding procedure WPS-B-T-4213-TC-U4B to make weld SEG-031-050. This QA Inspector observed that the welding is taking place on an elevated scaffold and that ZPMC QC Inspector Mr. Liu Wan Ning has recorded a welding current of 160 amps. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Sang Longpo, stencil 067588 appears to have been using the shielded metal arc process to weld diaphragm plates onto deck plate DP337-001. The QA Inspector observed the portable electrode storage oven that Mr. Longpo has been using to store his shielded metal electrodes is laying on its side and this QA Inspector observed that the welding electrodes are at an ambient temperature. ZPMC QC Inspector Mr. Guo Xing Hui saw this QA Inspector opening the portable electrode storage oven and Mr. Guo Xing Hui confirmed the welding electrodes are at an ambient temperature instead of being heated as required by AWS D1.5. Mr. Guo Xing Hui removed the electrodes from the portable electrode storage oven and he then informed ZPMC welder Mr. Sang Longpo that these electrodes are to be discarded. This QA Inspector also informed ZPMC CWI Mr. Lu Li Qing that these shielded metal electrodes are at an ambient temperature and Mr. Lu Li Qing said he agrees the electrodes are to be discarded. This QA Inspector did not observe ZPMC welder Mr. Sang Longpo using these electrodes to make any welds. See the photograph below that shows Mr. Guo Xing Hui holding the welding electrodes that he had removed from Mr. Sang Longpo's portable electrode storage oven. Items observed on this date do not appear to generally comply with applicable contract documents.

OBG Bay 6

This QA Inspector observed ZPMC welder Mr. Fu Yanjie, stencil 066268 is using shielded metal arc procedure WPS-B-T-2212-TC-UC5 to make tower double diaphragm tack weld ESD1-FBSA4-2A/C-009. The QA Inspector observed a welding current of approximately 260 amps and the base material where the weld is being made had been preheated with electric heaters to a temperature above 180 degrees Celsius. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Wei Hengbin, stencil 068924 is using shielded metal arc procedure WPS-B-T-2212-TC-UC5 to make tower double diaphragm tack weld ESD1-FBSA4-2A/C-008. The QA Inspector observed a welding current of approximately 255 amps and the base material where the weld is being made had been preheated with electric heaters to a temperature above 180 degrees Celsius. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Niu DuoJun, stencil 037932 is using shielded metal arc procedure WPS-B-T-3313-TC-P5 to make tower double diaphragm tack weld NSD1-DPSA4-2B/B-025. The QA Inspector observed a welding current of approximately 180 amps and the base material where the weld is being made had been preheated with electric heaters to a temperature above 180 degrees Celsius and the welding electrodes are

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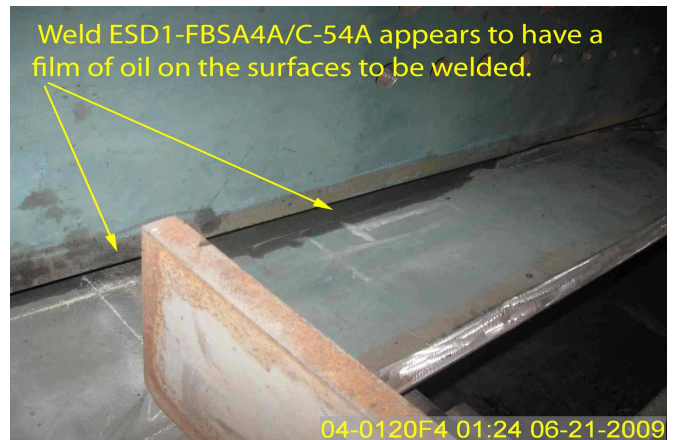
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being stored in a portable rod oven. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Zhou Songsong, stencil 068091 is using shielded metal arc procedure WPS-B-T-3313-TC-P5 to make tower double diaphragm tack weld NSD1-DPSA4-2B/B-024. The QA Inspector observed a welding current of approximately 180 amps and the base material where the weld is being made had been preheated with electric heaters to a temperature above 180 degrees Celsius. Items observed on this date appeared to generally comply with applicable contract documents.

Tower Bay 11

This QA Inspector observed ZPMC welder Mr. Guo Xian Wei, stencil 255865 is using shielded metal arc procedure WPS-B-P-2212-TC-UC5 to tack skin plate stiffener tack weld ESD1-FBA4A/C-54A. This QA Inspector observed a welding current of approximately 220 amps and the base material where the weld is being made had been preheated with a torch. This QA Inspector observed the weld bevel and base material near where Mr. Wei had completed this tack weld appears to have a layer of oil. Having oil on the surface where a weld is to be made is a violation of AWS D1.5. This QA Inspector informed ZPMC QC Inspector Mr. Fu Wei Min that there appears to be oil where one of the skin plate tack welds is going to be made. Mr. Min had this area cleaned and approximately 30 minutes later this QA Inspector observed most of the oil has been removed from the base material where the tack weld is going to be made. This QA Inspector informed Mr. Min that the weld bevel still contains some oil contamination and Mr. Min had additional cleaning performed. This QA Inspector later observed that the weld bevel and adjacent base material where the oil had been now appears to be cleaned of oil contamination.



Summary of Conversations:

See above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang phone: 150-0042-2372 , who represents the Office of Structural Materials for your project.

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Inspected By:	Dawson,Paul	Quality Assurance Inspector
Reviewed By:	Carreon,Albert	QA Reviewer
